



UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE
United States Patent and Trademark Office
Address: COMMISSIONER FOR PATENTS
P.O. Box 1450
Alexandria, Virginia 22313-1450
www.uspto.gov

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/801,949	03/16/2004	Akiyoshi Aoyagi	9319S-000668	2923
27572	7590	08/09/2005	EXAMINER	
HARNESS, DICKEY & PIERCE, P.L.C. P.O. BOX 828 BLOOMFIELD HILLS, MI 48303			PIZARRO CRESPO, MARCOS D	
			ART UNIT	PAPER NUMBER
			2814	
DATE MAILED: 08/09/2005				

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

10/801,949

Applicant(s)

AOYAGI, AKIYOSHI

Examiner

Marcos D. Pizarro-Crespo

Art Unit

2814

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 26 July 2005.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-19 is/are pending in the application.
- 4a) Of the above claim(s) 2, 6-8, 10-12, 14-17 and 19 is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1, 3-5, 9, 13 and 18 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☒ Claim(s) 1-19 are subject to restriction and/or election requirement.

Application Papers

- 9) ☒ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 16 March 2004 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some * c) ☐ None of:
- 1) ☒ Certified copies of the priority documents have been received.
 - 2) ☐ Certified copies of the priority documents have been received in Application No. _____.
 - 3) ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☒ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date 6/2/5, 4/14/5, 3/7/5
- 4) ☐ Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☒ Other: See Continuation Sheet

Continuation of Attachment(s) 6). Other: I.D.S. Mail Date:3/4/5,3/1/5,7/29/4,3/16/4.

Attorney's Docket Number: 9319S000668

Filing Date: 3/16/2004

Claimed Foreign Priority Date: 3/18/2003 (JP 2003-074218)

Applicant(s): Aoyagi

Examiner: Marcos D. Pizarro-Crespo

DETAILED ACTION

This Office action responds to the election filed on 7/26/2005.

Election/Restrictions

1. Applicant's election without traverse of claims 1, 3-5, 9, 13, and 18 in the reply filed on 7/26/2005 is acknowledged. Claim 7 depends on non-elected claim 6. Accordingly, claims 2, 6-8, 10-12, 14, and 19 are withdrawn from further consideration pursuant to 37 CFR 1.142(b) as being drawn to a nonelected species, there being no allowable generic or linking claim.

Priority

2. Receipt is acknowledged of papers submitted under 35 U.S.C. 119(a)-(d), which papers have been placed of record in the file.

Specification

3. The title of the invention is not descriptive. A new title is required that is clearly indicative of the invention to which the claims are directed.

Claims Rejection

4. Initially, and with respect to claims 3 and 9, note that a "product by process" claim is directed to the product *per se*, no matter how actually made. See *In re Thorpe*, 227 USPQ 964 (CAFC, 1985) and the related case law cited therein which makes it clear that it is the final product *per se* which must be determined in a "product by process" claim, and not the patentability of the process, and that, as here, an old or obvious product produced by a new method is not patentable as a product, whether claimed in "product by process" claims or not. As stated in Thorpe,

even though product-by-process claims are limited by and defined by the process, determination of patentability is based on the product itself. *In re Brown*, 459 F.2d 531, 535, 173 USPQ 685, 688 (CCPA 1972); *In re Pilkington*, 411 F.2d 1345, 1348, 162 USPQ 145, 147 (CCPA 1969); *Buono v. Yankee Maid Dress Corp.*, 77 F.2d 274, 279, 26 USPQ 57, 61 (2d. Cir. 1935).

Note that the applicants have the burden of proof in such cases, as the above case law makes clear.

Claim Rejections - 35 USC § 102

5. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

Claim Rejections - 35 USC § 103

6. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

7. Claims 1, 3-4, 9, 13, and 18 are rejected under 35 U.S.C. § 102(e) as being anticipated by, or in the alternative, under 35 U.S.C. § 103 (a) as obvious over Nishimura (US 6781241).

8. Regarding claim 1, Nishimura shows (see, e.g., fig. 16) all aspects of the instant invention including a semiconductor device comprising:

- ✓ A first carrier substrate **1b**
- ✓ A first semiconductor chip **3b** mounted on the first carrier substrate **1b**
- ✓ A second carrier substrate **1a**
- ✓ A second semiconductor chip **3** mounted on the second carrier substrate **1a**
- ✓ Protruding electrodes **7** connecting the second substrate **1a** to the first **1b** so that the second substrate **1a** is above the first chip **3b**
- ✓ A sealant **2** sealing the second chip **3** so as to include a region in which the protruding electrodes **7** are arranged

9. Regarding claim 3, Nishimura shows the sealant comprising a resin (see, e.g., col.7/ll.30).

10. Regarding claim 4, Nishimura shows a position of a sidewall of the sealant **2** coincides with a sidewall of the second substrate **1a** (see, e.g., fig. 16).

Art Unit: 2814

11. Regarding claim 5, Nishimura shows the first chip **3b** is flip-chip mounted on the first substrate **1b** (see, e.g., col.5/ll.22-23 and fig. 16).

12. Regarding claim 9, Nishimura shows (see, e.g., fig. 16):

- ✓ The first substrate **1b** comprising a ball grid array **7a**
- ✓ The second substrate **1a** comprising a sealed ball grid array **7**

13. Regarding claim 18, Nishimura shows the second chip comprising a plurality of stacked semiconductor chips **3d/3e**.

14. Regarding claim 13, Nishimura shows (see, e.g., fig. 16) an electronic device comprising:

- ✓ A first carrier substrate **1b**
- ✓ A first electronic part **3b** mounted on the first substrate **1b**
- ✓ A second carrier substrate **1a**
- ✓ A second electronic part **3d/3e** mounted on the second substrate **1a**
- ✓ Protruding electrodes **7** connecting the second substrate **1a** to the first **1b** so that the second substrate **1b** is held above the first electronic part **3b**
- ✓ A sealant **2** sealing the second electronic part **3d/3e** so as to include a region in which the protruding electrodes **7** are arranged.

15. Regarding claims 3 and 9, it is noted that Nishimura shows all structural aspects of the claimed device (see, e.g., paragraph 8 above) and that the steps of molding the resin and flip-chip mounting the ball grid array on the first substrate are intermediate method steps that does not affect the structure of the final device.

Art Unit: 2814

16. As to the grounds of rejection under section 103, see MPEP § 2113, which discusses the handling of “product by process” claims and recommends the alternative (§ 102/ § 103) grounds of rejection.

Conclusion

17. Papers related to this application may be submitted directly to Art Unit 2814 by facsimile transmission. Papers should be faxed to Art Unit 2814 via the Art Unit 2814 Fax Center. The faxing of such papers must conform to the notice published in the Official Gazette, 1096 OG 30 (15 November 1989). The Art Unit 2814 Fax Center number is **(571) 273-8300**. The Art Unit 2814 Fax Center is to be used only for papers related to Art Unit 2814 applications.

18. Any inquiry concerning this communication or earlier communications from the examiner should be directed to **Marcos D. Pizarro-Crespo** at **(571) 272-1716** and between the hours of 9:30 AM to 8:00 PM (Eastern Standard Time) Monday through Thursday or by e-mail via Marcos.Pizarro@uspto.gov. If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Wael Fahmy, can be reached on (571) 272-1705.

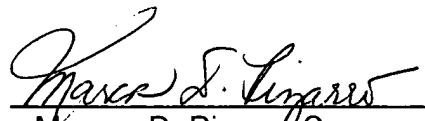
19. Any inquiry of a general nature or relating to the status of this application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair->

Art Unit: 2814

direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

20. The following list is the Examiner's field of search for the present Office Action:

Field of Search	Date
U.S. Class / Subclass(es): 257/678-733	8/5/2005
Other Documentation:	
Electronic Database(s): EAST (USPAT, EPO, JPO)	8/5/2005


Marcos D. Pizarro Crespo
Patent Examiner
Art Unit 2814
571-272-1716
marcos.pizarro@uspto.gov

MDP/mdp
August 5, 2005